



# Check & Connect: The importance of relationships for promoting engagement with school

Amy R. Anderson\*, Sandra L. Christenson,  
Mary F. Sinclair, Camilla A. Lehr

*University of Minnesota, USA*

---

## Abstract

The purpose of this study was to examine whether the closeness and quality of relationships between intervention staff and students involved in the Check & Connect program were associated with improved student engagement in school. Participants included 80 elementary and middle school students referred to the Check & Connect program for poor attendance, an early sign of disengagement, while in elementary school. After accounting for student risk and prior attendance, student and interventionist perceptions of the closeness and quality of their relationship were found to be associated with improved engagement in terms of school attendance, and interventionist perceptions of their relationships with students were associated with teacher-rated academic engagement (e.g., prepared for class, work completion, persistence). The importance of designing and evaluating relationship-based interventions for students at-risk for school failure is discussed. © 2004 Society for the Study of School Psychology. Published by Elsevier Ltd. All rights reserved.

*Keywords:* Engagement; Relationships

---

## Introduction

In recent years, there has been an explosion of interest in fostering the resilience and competence of children. One of the most consistent findings in this literature is that positive, supportive relationships with adults are associated with good outcomes for children. According to Masten and Reed (2002), “The best documented asset of resilient children is a strong bond to a competent and caring adult, which need not be a parent.”

---

\* Corresponding author. School Psychology Program, Department of Educational Psychology, University of Minnesota, 350 Elliott Hall, 75 East River Road, Minneapolis, MN 55455, USA. Fax: +1-612-624-0879.

*E-mail address:* ande2654@umn.edu (A.R. Anderson).

It is thought that these relationships provide children with resources to foster positive development, regardless of children's risk status (Pianta & Walsh, 1998). For many students in our schools, relationships with school staff are among the most salient and influential relationships in students' lives. Indeed, the importance of relationships between supportive adults and students in the school setting is repeated in the literature (e.g., Benson, 1997; Garbarino, 1995; Pianta & Walsh, 1996, 1998; Resnick et al., 1997).

Not surprisingly, much of the research regarding relationships among school staff and students has been conducted with teachers. For elementary students, relationships between teachers and students have been associated with students' school behavior (Pianta, Steinberg, & Rollins, 1995), achievement and school adjustment (Birch & Ladd, 1997), retention and promotion decisions in kindergarten (Pianta & Steinberg, 1992), and subsequent levels of aggression (Hughes, Cavell, & Jackson, 1999). There is also an indication that relationships between specific students and teachers influence the peers' perceptions and social preference for those students (Hughes, Cavell, & Willson, 2001). Furthermore, it appears that relationships between teachers and students early in elementary school have long-term effects on students' academic and behavioral outcomes, particularly for negative aspects of these relationships (Hamre & Pianta, 2001).

Similar results have been found with middle school students and their teachers. For this age group, relationships between students and teachers have been associated with students' motivation, achievement, feelings of belonging, and affect in school (Roeser, Eccles, & Sameroff, 1998; Roeser, Midgley, & Urdan, 1996). In addition, middle school students' perceptions of support and caring from teachers have been linked to students' current interest in class and school, which in turn, were significant predictors of GPA the following year (Wentzel, 1998). There is an indication, however, that the quality of relationships between teachers and students deteriorates from elementary to middle school (Barber & Olsen, 1997; Feldlaufer, Midgley, & Eccles, 1988), as do students' school-related attitudes and motivation (e.g., Eccles et al., 1993; Roeser & Eccles, 1998; Wigfield & Eccles, 1994). Also, student perceptions of support from teachers may be an important factor in understanding changes in student attitudes and motivation that occur between elementary and middle school (Midgley, Feldlaufer, & Eccles, 1989).

Recent interest in the resilience literature can be attributed, at least in part, to the hope that by studying and understanding the phenomenon of resilience, we will discover ways to promote or encourage resilience in children placed at-risk for poor developmental outcomes (Doll & Lyon, 1998; Miller, Brehm, & Whitehouse, 1998). One of the most remarkable and compelling conclusions from years of resilience research is that resiliency appears to not to arise from extraordinary circumstances or rare traits, but rather from the ordinary, "everyday magic" embedded in systems of development—within children, families, schools, communities, and their interactions (Masten, 2001). While this conclusion allows for optimism in our hopes and efforts to affect positive change, there are very few published interventions that are purposely based in the findings of the resilience literature and research on teacher–student relationships of the importance of relationships between adults and youth. Check & Connect, one of the few published relationship-based interventions, is described in this article.

## Check & Connect and early intervention

Check & Connect is an intervention model designed to promote student engagement with school through relationship building, problem solving, and persistence. There is both theoretical (Connell & Wellborn, 1991; Finn, 1989; McPartland, 1994) and empirical evidence (Alexander, Entwisle, & Horsey, 1997; Barrington & Hendricks, 1989; Finn & Cox, 1992; Finn, Folger, & Cox, 1991; Finn & Rock, 1997; Skinner, Wellborn, & Connell, 1990) for the relevance of student engagement for important educational outcomes. Engagement involves positive student behaviors, such as attendance, paying attention, and participation in class, as well as the psychological experience of identification with school and feeling that one is cared for, respected, and part of the school environment. Further, engagement has emerged as the critical variable in dropout prevention efforts (Grannis, 1994).

Early identification and intervention for students showing signs of disengagement from school are critical. There is mounting evidence that dropping out of school is process of disengagement that occurs over many years, often beginning early in elementary school (e.g., Alexander et al., 1997; Barrington & Hendricks, 1989; Ensminger & Slusarcick, 1992). Most of the well-established predictors of dropout (e.g., race, socioeconomic status) are not amenable to change (Christenson, Sinclair, Lehr, & Hurley, 2000) and provide little in the way of intervention, with the exception of student engagement. As noted by Alexander et al. (1997, p. 89), “From a developmental perspective, academic engagement is the key to dropout on the personal side of the equation.” It is necessary to acknowledge, of course, that dropout, like school performance, is a product of the multiple systems in which children are embedded and interactions among these systems and circumstances over time (Christenson & Anderson, 2002).

In one study, Alexander et al. (1997) found that after accounting for demographic variables, measures of family context, school experiences, and students’ personal resources (e.g., attitudes and behaviors), collected when students were in the first grade, were predictive of dropout several years later. Children’s engagement behaviors in the first grade, for example, attendance (tardiness and absences) and in-school behavior, accounted for more variance (12%) than their attitudes (e.g., self-image, satisfaction with school and locus of control); however, attachment to school in the first grade was a significant predictor of student dropout. In terms of attendance, dropouts averaged 16 absences in 1st grade, compared to 10 absences for graduates. Each additional absence was estimated to increase the likelihood of dropout by 5%.

### *Intervention staff*

The staff responsible for implementing the Check & Connect model with individual students and families are called monitors.<sup>1</sup> The monitor’s role has been described as one of

---

<sup>1</sup> Although monitors have occasionally been referred to as mentors or Check & Connect workers on other projects that use the Check & Connect model, the term monitor was consistently used during this project and is the term used throughout this paper.

mentor, case manager, and advocate (Christenson et al., 2000). Monitors work to create positive relationships between students, families, and the school, always with a focus on the goal of keeping education a salient issue for disengaged students. To be effective, monitors are expected to share the belief that all students have abilities and can learn, are willing to work collaboratively with families and school personnel, will advocate for a child and family when needed, can handle conflict constructively, and have sufficient organizational skills to handle the case management and documentation requirements of the program (Christenson, Sinclair, Thurlow, & Evelo, 1999). Monitors are not expected to be ‘best friends’ with each youth, but rather to establish a nurturing and supportive relationship based on mutual trust and a common goal—the youth’s educational success.

The job of the monitor is a paid position, with salary and benefits roughly equivalent to that of a paraprofessional or community agency staff. Monitors are hired from the community and participating school districts, primarily adults with a 4-year degree in a human services related field or equivalent experience, as well as from the University, primarily graduate students in school psychology and special education. The funding sources have included federal grants, foundations, and state and local dollars. In the elementary applications of the model, which is the context of this study, a typical caseload for a monitor working 40 h per week is between 40 and 48 students. Monitors are assigned a caseload of students and at the elementary level generally work in a limited number of schools—about three to four sites for a full-time monitor in schools that serve student populations with substantive attendance issues. In the event an elementary student moves from one participating school to another supported by a different monitor, the case is typically transferred. While secondary monitors tend to maintain their original caseloads regardless of mobility and move with the students, developmentally the elementary students are more responsive to the monitor they see most often, that is the monitor assigned to the building caseload. The transfer process includes a meeting with the family and both the old and new monitors and may take a period of a couple weeks. Monitors are asked to make a 2-year commitment to working with students, families, and schools involved in Check & Connect.

Monitors meet individually with the elementary students on their caseloads at least once a week in addition to incidental interactions in school at other times during the week (Lehr, Sinclair, & Christenson, 2003). Monitors also establish regular communication with families, typically interacting with them by phone, via notes, or in person on a regular basis. Communication tools, such as voicemail and pagers, are critical for monitors to maintain timely contact with families, school staff, and community professionals. Because monitors operate as auxiliary resource staff to a building, access to space is negotiated. When available, monitors are allotted office space and when not available they share desks and reserve time to meet in vacant rooms or find a quiet hallway. Although the specific activities and topics of conversations between monitors and students vary, the monitor’s persistent message to the student is that, “education is important and you can succeed in school.”

The monitor’s relationship to building staff, as an auxiliary resource member who is linked to the student and multiple sites rather than one specific building, serves as both a strength and weakness of the program. This arrangement allows for much greater flexibility with monitors’ time. For example, monitors often pick up students and bring

them to school; attend special school events outside of regular school hours, such as science fairs, concerts, and parent–teacher conferences; provide transportation for families to school events; and continue to see students during the summer months. On the other hand, this flexibility also leaves monitors to negotiate a role for themselves within schools and earn the trust of school staff (Christenson et al., 1997).

### *Intervention components*

As implied by the name, the key components of the program involve checking and connecting with students, families, and school staff. The *check* component is based on indicators of engagement delineated in Finn's (1989) empirically supported model of student engagement. Checking involves (a) systematic assessment of *alterable* signs of student engagement, such as attendance, behavior referrals, and academic progress, and (b) regular evaluation of these indicators of engagement to ensure a prompt response when students are exhibiting signs of school withdrawal. Behavioral and academic indicators of engagement (e.g., attendance, suspensions, course failures) are collected and documented routinely by the monitors and summarized each month on the Check & Connect Monitoring Sheet (Lehr et al., 2003; Sinclair et al., 1997). Journaling or logging qualitative information regarding key details of individual meetings with students, conversations with school staff and family members, or other pertinent information is strongly recommended to enhance the monitor's memory of significant events.

The *connect* component refers to the personal connections that monitors make with students, families, and school staff in the implementation of this intervention. Relationships between program staff and students, families, and teachers are integral to the success of this intervention as monitors join in, energize, and facilitate efforts to promote student's engagement in school. The monitors' approach is best characterized by the persistence-plus framework. Persistence-plus refers to *persistence* with students and families (e.g., not giving up on the student and maintaining positive and high expectations), *continuity* over time, and *consistency* (e.g., the message of caring and the importance of school is omnipresent; Christenson et al., 2000).

### *Dissemination and evidence*

The Check & Connect model was first implemented with middle school students with identified learning disabilities and emotional or behavioral disorders as part of an Office of Special Education Programs grant to develop, refine, and assess dropout prevention and intervention strategies among middle school youth with disabilities (Sinclair, Christenson, Evelo, & Hurley, 1998). This program has also been used with (a) secondary students receiving special education services for serious emotional problems (grades 9–12) in an urban school district (Sinclair, 2001), (b) in several suburban and urban school districts with secondary students exhibiting significant truancy from school (Sinclair & Kaibel, 2002; Sinclair, McCauley, & Kaibel, 2002), (c) and with elementary students (grades K–6) in three suburban school districts who are demonstrating attendance and learning problems (Lehr et al., 2003). Further, Check & Connect has been utilized recently as a service delivery model for interventions to promote early literacy and student engagement

(O'Shaughnessy & Christenson, 2001) and positive adjustment for young elementary students exhibiting aggressive behavior (Christenson, 2001).

Empirical results from studies of the Check & Connect model are compelling. In the initial trial of Check & Connect with middle school students with learning disabilities or emotional and behavioral disorders, results of an experimental study indicated that students in the treatment group were significantly more likely to be enrolled in school, have persisted in school (never dropped out), and were on track to graduate within 5 years than students in the control group (Sinclair et al., 1998). Results from the elementary application in which this study on relationships was conducted indicate that 86% of students who received intervention for at least 2 years showed increased levels of student engagement as evidenced by significant increases in the percentage of students who were absent or tardy less than 5% of the time, an improvement of 104% over baseline behavior (Lehr et al., 2003). Also, over 90% of the school staff perceived students were showing improvement in terms of increased attendance, more attention to homework completion, and increased interest in school, and 87% of school staff reported parents were more supportive of their child's education (e.g., better follow through, more constructive communication between home and school, more attention to homework completion).

The purpose of this study was to examine whether the closeness and quality of relationships between students and staff involved in the elementary Check & Connect program were associated with improved engagement with school. Specifically, we sought to determine whether the closeness and quality of relationships between interventionists and children were associated with students' (a) improved behavioral engagement in school in the form of attendance, and (b) social and academic engagement in school. It was expected that closer relationships between interventionists and students would be associated with improvement in these outcome measures. Finally, we were also interested in investigating the presence of an interaction between student risk, relationships, and student engagement.

## Method

### *Participants*

Participants in this study were students who received Check & Connect services for 20 months or more ( $N=116$ ). Students were referred to the program for exhibiting a consistent pattern of absences and tardies during elementary school (i.e., absent or tardy 12% or more of the previous school year and months prior). Referrals originated from eleven elementary schools in three suburban school districts near a large urban area in the Midwest. A signed permission form from the child's parent or guardian was obtained before the child and family could participate.

Data for 80 of the 116 students who received services for 20 months or more are presented in this article. Some students were excluded from these analyses. Twelve students maintained their baseline levels of attendance, rather than showing an improvement or decline, and were excluded because the purpose of this study was to ascertain the role of the quality of the monitor–child relationship with improvement in school

engagement. Further, the  $N$  was too small to retain these students as a separate group in analyses. The overall  $N$  was further reduced to 80 due to response rates on one of the outcome measures. Chi-square analyses did not reveal any significant differences in terms of grade at referral to the program, race, special education or Title 1 services, gender, or attendance at outcome in school between those students excluded due to missing data and those retained in the sample. Of the remaining students, approximately 73% had improved in attendance according to program criteria ( $N=58$ ), while 27.5% had declined in attendance ( $N=22$ ).

The number of months of intervention services ranged from 20 to 31 months, with a mean of 27 months. The majority of these students were of European American non-Hispanic descent (71%), referred to the program in grades K-3 (66%), did not receive special services (34% special education, 2% English language learners), and lived in single-parent homes (60%). Most students participating in Check & Connect were still enrolled in the elementary school level at the time this study on relationships was conducted (71%). The remaining 23 students (29%) had transitioned to middle school with Check & Connect. There were equal numbers of males and females in the sample.

When the relationship measures were collected, seven monitors were working in 16 schools. Eleven of these schools were elementary sites and five were middle schools. The monitors at this time were all women, five of whom were hired from the community and two of whom were graduate students in school psychology.

### *Procedures and measures*

Surveys were collected from both monitors and students regarding the closeness and quality of their relationship and outcome measures of one form of behavioral engagement (student attendance) and teacher-rated academic and social engagement, in addition to data collected on factors that place students at risk for school failure. Procedures are described concurrently with each measure.

### *Student risk*

As students enter the program, monitors complete a form noting the presence or absence of certain risk factors associated with poor school outcomes. This information was updated periodically to ensure the most accurate portrayal of student risk. The list of specific risk factors and how each was coded are as follows:

- Ethnicity (European American, Other)
- Special education services (Do not receive services, Receive services)
- Title 1 services/Lunch Program (Not eligible, Eligible)
- Grade retention (Not retained, Retained)
- Resides with (Parents/guardians [two caregivers], Single or foster parent [one caregiver])
- Social worker (No social worker, Social worker assigned)
- Sibling history of disengagement from school (No history, History)
- Limited English proficiency (No services, Receive services)
- School level (Elementary, Middle).

School level was included as a risk factor because research indicates a decline in school-related attitudes and motivation as students transition to middle school (e.g., Eccles et al., 1993; Roeser & Eccles, 1998; Wigfield & Eccles, 1994). Further, our own research with the elementary Check & Connect program found that students who transitioned to middle school while in the program were significantly more likely to exhibit decreases in their school attendance (Lehr, Christenson, Sinclair, Havsy, & Anderson, 1999; Sinclair & Lehr, 2000), have significantly more negative perceptions of the school environment (e.g., teachers care about me, people at school are friendly to me, people tell me when they see me do something well), and report less academic self-efficacy (e.g., even if the work is hard, I can learn it) than their elementary school counterparts (Anderson & Havsy, 2001; Sinclair & Lehr, 2000).

### *Relationship measures*

The *Monitor–Student Relationship Survey* is a project-derived measure designed to measure the closeness and quality of relationships between students and monitors. A review of the literature regarding relationships and belonging informed the development of this survey and provides some evidence of content validity, as does monitors' opinions of what constitutes close, high-quality relationships between themselves and students. Monitors indicated that closer relationships were characterized by the monitor's perception that the student is excited to see the monitor, seems comfortable talking and spending time with the monitor, is willing to share information about school and family experiences, and has asked or been receptive to an offer of help from the monitor. Another consideration in constructing the relationship surveys was the age of the students involved in the program. The survey had to be brief and understood by students as young as age 5.

Questions on the *Monitor–Student Relationship Survey* were completed on a four-point Likert-type scale asking monitors and students to rate the extent to which each item is true of the monitor–student relationship (1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree). The surveys were designed to include four parallel items. The items on the monitor survey were: *This child is excited to meet with me*; *This child is comfortable spending time with me and talking to me*; *This child easily and readily shares information with me about his or her school experiences and personal life*; and *This child has asked for, or been receptive to, an offer of help from me*. The monitor version also included a measure of the quality of the relationship between the monitor and the child (*How would you rate the extent to which you have been able to build a relationship, or connect, with this child?* 1=still working on it; 2=fairly good; 3=very close connection/good relationship). The alpha reliability coefficient for the five items on the monitor survey was 0.84.

The student version of the survey was comprised of six items. Two additional items were designed to measure student perceptions of persistence and advocacy by their monitor. The alpha reliability coefficient for the student survey was 0.74; however, when two of the items similar to those asked of monitors were omitted from the scale, the alpha coefficient for the remaining items actually increased rather than decreased. Further analysis of these items revealed that neither item was significantly correlated with each other or the other items on the scale; therefore, these items were dropped and a sub-scale of four items ( $\alpha=0.77$ ) were used to represent student perceptions of the relationship with his or her monitor. Items on the student survey were: *I feel comfortable meeting with my*

monitor; I feel comfortable talking with my monitor; I know that my monitor is really on my side; and I know that my monitor is there for me no matter what I do. Means and standard deviations for the student and monitor survey averages by intervention outcome grouping are found in Table 1.

Monitors completed a survey for each student in the program during a staff meeting while someone other than the student's monitor, usually another Check & Connect monitor, administered the student surveys. Students completed surveys during non-academic times of the school day, typically during the time when the monitor and student regularly met, during recess, or lunch. If a student was absent or unavailable on the day that surveys were administered at a school, a second attempt was made. In a few cases, older students were given the survey by their monitor, left alone to complete it, and instructed to seal their responses in an envelope. The response rates for the monitor and student relationship surveys were 100%.

### Engagement measures

#### Intervention outcome: attendance

One measure of the success of the Check & Connect intervention is the daily attendance of students in the program. Attendance is the most basic engagement behavior—if students are not present, they cannot learn, establish relationships with teachers and peers, or experience other forms of engagement at school and with learning. Furthermore, students' attendance in school has been associated with student achievement (Minneapolis Public Schools, 2002) and dropout (Alexander et al., 1997; Rumberger, 1995). Attendance data were used to categorize students into two groups, those with improving attendance (IA) and those with declining attendance (DA).

Table 1

	Improving attendance (N=58)		Declining attendance (N=22)		F
	M	S.D.	M	S.D.	
Baseline attendance					
Absences	11.98%	7.55	8.18%	6.31	4.4*
Tardies	8.26%	9.56	9.21%	9.03	0.1
Current attendance					
Absences	7.17%	5.05	17.36%	8.21	45.03**
Tardies	3.88%	5.32	6.09%	11.43	
Risk factors	2.78	1.39	3.59	1.56	5.12*
Monitor–Student Relationship Survey					
Monitor scale average	3.18	0.51	2.85	0.72	5.34*
Student survey average	3.69	0.39	3.42	0.65	5.06*
Engagement in School—Teacher Rating Scale					
Factor 1: academic engagement average	3.27	0.97	2.63	1.04	6.72**
Factor 2: social engagement average	3.93	0.80	3.39	1.12	5.93*

Attendance data are percentage of days absent/tardy relative to number of days enrolled.

\*  $p < 0.05$ .

\*\*  $p < 0.01$ .

All attendance data were converted to a percentage of days absent and a percentage of days tardy relative to the total number of days enrolled for the relevant period. Converting the raw numbers of absences and tardies was necessary because the total number of days enrolled varied by district, referral to Check & Connect was ongoing throughout the school year, and students enrolled after the start of the school year or left the participating school districts prior to the end of the year.

The percentage change was computed for both absences and tardies by comparing students' baseline attendance to their current attendance. Criteria for placement in the IA or DA groups required at least a 5% change to be considered a substantial shift. In an average school year of 180 days, a change of 5% represents an additional 9 days present or on-time at school. Among the few cases (approximately 10%) in which changes in a student's tardiness and absences moved in opposite directions, decision rules were established for coding purposes based on the overall time a student was physically present in school. Essentially, the direction of change for absence data was considered first. For example, if a student improved in absences but was tardy more often, the student was placed in the IA group, whereas, if a student improved on tardies but increased in absences, he or she was placed in the DA group.

#### *Teacher-rated academic and social engagement*

The *Engagement in School—Teacher Rating Scale* is a project-derived measure. Items were written to represent aspects of student engagement and support for learning (e.g., academic initiative, behavior in the classroom) and to be sensitive to the impact of the Check & Connect intervention on these important intervention components. The 13 items that reflected the student's academic and behavioral performance were selected as measures of student engagement. These 13 items were submitted to a Principal Components Analysis (PCA) with Varimax Rotation. This analysis revealed two principal components with Eigen values greater than 1.0. Factor 1 appears to represent variance related to students' academic behavior and attitudes while Factor 2 is thought to represent variance associated with more interpersonal or social aspects of students' school experiences. Together, the two factors account for 77% of the variance. One item, [*This student*] *Can choose a good alternative plan to solve a problem*, loaded equally on both factors. Alpha reliability coefficients for the Academic and Social Factors were 0.95 and 0.94, respectively. Means and standard deviations for the teacher rating scale grouped according to intervention outcome may be found in Table 2.

For the *Engagement in School—Teacher Rating Scale*, monitors distributed the survey to one teacher of every student in the program. In elementary schools, the child's regular classroom teacher completed the survey. For middle school students, teachers from core academic subjects were targeted, beginning with language arts and followed by mathematics, social studies, and science. There was a 77% response rate on the *Engagement in School—Teacher Rating Scale*.

#### *Intervention fidelity*

Several steps were taken to ensure the fidelity of the Check & Connect intervention. Monitors attended weekly supervisory meetings to review cases, discuss intervention

Table 2  
Engagement in school—teacher rating scale

	Improving attendance (N=58)		Declining attendance (N=22)	
	M	S.D.	M	S.D.
Can choose a good alternative plan to solve a problem*	3.40	1.06	3.18	1.33
<i>Factor 1: academic</i>				
Completes work and turns in on time	3.30	1.34	2.55	1.30
Completes work with 80 to 100% accuracy	3.31	1.06	2.66	1.29
Completes work in a careful and thoughtful manner	3.31	1.13	2.64	1.00
Is prepared when class begins	3.21	1.27	2.55	1.26
Is eager to learn	3.55	1.05	2.73	1.24
Has confidence in themselves to participate and try their best	3.26	1.13	2.55	1.01
Persists when challenged by difficult tasks	2.83	1.23	2.20	1.14
<i>Factor 2: interpersonal/social</i>				
Complies with adult directives	4.17	0.84	3.68	1.13
Follows school rules	4.29	0.82	3.59	1.18
Thinks ahead about consequences before acting	3.60	1.12	3.00	1.35
Gets along well with others	4.10	0.99	3.45	1.14
Respects others' rights and feelings	4.03	0.88	3.41	1.14

\* This item loaded equally on both factors.

strategies, and promote staff development. Also, monitors were visited periodically at their respective schools by a program supervisor. In addition, school principals met with supervisory staff from Check & Connect and from the county to discuss concerns, implementation issues, and preliminary data from the program approximately every 6 months. The monitoring forms, documenting attendance and other indicators of engagement, were completed by Check & Connect monitors and turned in to supervisors at the end of every month.

## Results

### *Descriptive analyses*

Means and standard deviations for baseline attendance, current attendance, student risk, the monitor and student versions of the *Monitor–Student Relationship Survey*, and the *Engagement in School—Teacher Rating Scale* by intervention outcome group (IA/DA) are presented in Table 1. ANOVAs revealed differences between these two groups in terms of baseline and current attendance, risk factors, monitor and student ratings of their relationship, and teacher-rated academic and social engagement. Students who were in the IA group had significantly higher rates of absences at baseline and significantly lower rates of absences at outcome than those students in the DA group.

### Regression analyses

#### Intervention outcome: attendance

Two logistic regressions were run to determine the relative contribution of the monitor–student relationship to students' current attendance, a form of behavioral engagement (Finn, 1989). The IA and DA groups were used as the dichotomous variable for the logistic regressions. Baseline attendance (absences and tardies) from the months prior to intervention and student risk factors were entered together as a block in the first step of all regressions (Step 1). The monitor and student perspectives of relationship were entered as a block after baseline attendance and risk factors to determine the unique contribution of each of the predictors after accounting for baseline attendance and risk (Step 2). Results appear in Table 3.

Student risk was a significant predictor of placement in the IA/DA groups. After accounting for student risk, the monitor and student versions of the relationship survey were significant predictors. The odds of improving in attendance were 2.94 times greater for every unit increase in the monitor survey average and 3.72 times greater for every unit increase in the student survey average.

#### Teacher-rated student engagement: academic and social engagement

Another set of regression analyses was conducted to examine the relative contribution of the quality of the monitor–student relationship to teacher-rated engagement. As in previous analyses, the covariates were baseline attendance and student risk. Predictors were the monitor and student versions of the relationship survey. Baseline attendance (absences and tardies) from the months prior to intervention and risk were entered together as a block in both regressions (Step 1). Each set of relationship predictors was entered as a block after baseline attendance and student risk to determine the unique contribution of each of the predictors after accounting for baseline attendance and school level (Step 2). Results appear in Table 4.

Table 3  
Logistic regression: relationship predictors and student attendance

Step and predictors	$\beta$	Significance	Odds ratio	–2 Log likelihood	% Correctly classified
Step 1: covariates					
Baseline tardies	–0.01	0.73	0.99		
Baseline absences	0.78	0.06	1.08		
Student risk	–0.406	0.04*	0.67	83.98	72%
Step 2					
Monitor survey average	1.08	0.03*	2.94	78.91	76%
Step 1: covariates					
Baseline tardies	0.78	0.73	0.99		
Baseline absences	–0.10	0.06	1.08		
Student risk	–0.406	0.04*	0.67	83.98	76%
Step 2					
Student survey average	1.32	0.03*	3.72	78.47	77%

\*  $p < 0.05$ .

Table 4

Relationship predictors and teacher-rated engagement multiple regression summary

Step and predictors	Standardized $\beta$ coefficient	$R^2$
<i>Academic engagement</i>		
Step 1: covariates		
Baseline tardies	−0.084	0.198
Baseline absences	−0.01	
Student risk	−0.447**	
Step 2		
Monitor relationship survey average	0.207*	0.239*
Step 1: covariates		
Baseline tardies	−0.084	0.198
Baseline absences	−0.01	
Student risk	−0.447**	
Step 2		
Student relationship survey average	1.80 <sup>+</sup>	0.232 <sup>+</sup>
<i>Social engagement</i>		
Step 1: covariates		
Baseline tardies	0.044	0.040
Baseline absences	−0.014	
Student risk	−0.190	
Step 2		
Monitor relationship survey average	0.021	0.040
Step 1: covariates		
Baseline tardies	0.044	0.040
Baseline absences	−0.014	
Student risk	−0.190	
Step 2		
Student relationship survey average	0.461	0.043

<sup>+</sup>  $p < 0.08$ .\*  $p < 0.05$ .\*\*  $p < 0.01$ .

Baseline risk was a significant predictor of teacher ratings of students' academic engagement. The monitor scale measuring the closeness and quality of relationships with students was a significant predictor of academic engagement in school. Neither the monitor or student perspectives of their relationship or student risk were significant predictors of social engagement.

### Interaction analyses

We also examined interaction terms for each of the previous regression analyses. With one exception, none of the interaction terms were significant. The one significant interaction was found for monitor perspective of relationships and student risk ( $\beta = -0.15$ ,  $p < 0.05$ ) with the teacher-rated social engagement outcome variable. To examine this interaction, both the student risk and relationship variables were divided at their means and scores on teacher-rated social engagement were examined, yielding upper and lower risk groups and below-average and above-average monitor–student relationship

groups. For students in the upper risk group, means on the social engagement scale did not differ based on whether the student's monitor had rated the quality of their relationship at below—or above—the sample average (20.76 and 20.53, respectively). On the other hand, for students in the lower risk sample, social engagement scores do appear to differ based on the quality of the monitor–student relationship. Students with closer relationships with their monitors had higher ratings of social engagement than those whose relationships were below the sample average (25.29 vs. 22.35).

## **Discussion**

Despite there being a great deal of research to indicate that relationships with adults are extremely important for children's successful development, these relationships are often overlooked as a point of intervention in schools. The purpose of this study was to examine whether the closeness and quality of relationships between students and intervention staff in the Check & Connect program are associated with student engagement in school. In general, results did demonstrate that closer, higher quality relationships were associated with improved engagement in school. This is not surprising given what we know about positive adult–child relationships and child outcomes; however, this study is unique in that it is among the first to demonstrate a link between the quality of relationships between students and intervention staff and an important school outcome. These results are particularly promising given that the students included in this program, by design, are at high risk for educational failure.

Specifically, the results of this study indicated that after accounting for baseline attendance and the other cumulative student risk factors that increase the likelihood for school failure, both monitor and student perceptions of the closeness and quality of their relationship were associated with improved engagement in terms of student attendance and monitors' perspectives of their relationships with students were a significant predictor of teacher ratings of academic engagement. There was only one significant interaction between students' risk status and student–monitor relationship with an outcome variable. This is impressive given what we know about the nature of risk. The negative effects of each additional risk factor on children's outcomes are multiplicative, rather than additive (Masten & Coatsworth, 1998). In general, students with higher risk did not have significantly poorer relationships with their monitors or less favorable engagement at school and with learning.

The one significant risk/relationship interaction was found with the social engagement scale. In general, students with lower risk had more favorable social engagement than students with higher risk. Furthermore, within the lower risk group, those who had closer relationships with their monitors had higher teacher ratings of social engagement. The explanation for these results may lie in the nature of social engagement. Behavioral and academic aspects of students' engagement (e.g., attendance, preparation, work completion, eagerness to learn) may be easier to impact than their social/interpersonal experiences at school, perhaps because behavioral engagement represents discrete, more explicit actions than the aspects of social engagement included in this study. More intensive, structured social interventions may be required to affect positive change in this area. Another

explanation may lie in transactional nature of students' social experiences at school. Students' social engagement may be more heavily influenced by the interrelationships between students and their peers and educators.

The results regarding improved student attendance and academic engagement, defined in this study as work completion and accuracy, class preparation, eagerness to learn, and persistence, are promising given the importance of these behaviors and attitudes for success in school. Although we did not analyze the association between these improvements and student achievement, other studies have demonstrated a link between student engagement, achievement, and school completion (e.g., Finn & Cox, 1992; Finn et al., 1991; Finn & Rock, 1997; Skinner et al., 1990), and students who improved in attendance were rated by their teachers as exhibiting better academic and social engagement with school. The implication of these results is that relationships between students and adults in schools, regardless of student risk, can positively affect student engagement and hopefully, students' educational outcomes.

While the monitor–student relationship is an integral part of the Check & Connect program, these are not the only relationships that are important to student outcomes. Monitors work closely with parents, teachers, and other school staff to support students and re-engage them in school. Research clearly indicates that the relationships students develop with teachers and peers are an important aspect of their motivation, achievement, and school behavior (e.g., Berndt & Keefe, 1995; Birch & Ladd, 1997; Kindermann, 1993; Pianta et al., 1995; Roeser et al., 1996, 1998; Sage & Kindermann, 1999; Wentzel, 1997, 1998; Wentzel & Watkins, 2002), as are the relationships that develop between home and school (Comer, Haynes, Joyner, & Ben-Avie, 1996). Though not examined in this study on relationships, it seems likely that both the monitors' and students' relationships with peers and teachers also affect the engagement of students involved in the Check & Connect intervention. This study was conducted as part of an on-going evaluation of the elementary Check & Connect program. Investigation of other issues, including the impact of Check & Connect on significant relationships (e.g., monitors and parents, students and teachers, parents and schools) and obtaining greater understanding of how these relationships affect student outcomes, will be important as this program and dissemination efforts continue.

One limitation of this study involves the measurement of the engagement construct and relationships. There are few published tools that may be used to measure student engagement or relationships; therefore, we chose to use project-derived measures. The content validity of these measures was established through a literature review of student engagement, relationships, and belonging. Furthermore, these measures were designed to be sensitive to the main components of the Check & Connect intervention.

Another limitation of this replication of the Check & Connect model is that resources did not allow for measurement of all aspects of students' engagement with school. Theories of engagement proposed by Finn (1989), McPartland (1994), and Connell and Wellborn (1991) have delineated several important aspects of student engagement, which include, but are not limited to those measured in this study. These theories and empirical evidence indicate that it is also important to understand students' feelings of belonging at school, their relationships with teachers and peers, participation in extracurricular activities, self-regulated learning, and the perceived relevance of education to the future. Based on our own work and the theories of engagement described by Finn (1989) and

Connell and Wellborn (1991), we have proposed four types as relevant for intervention design for enhancing student engagement: *behavioral* (e.g., participation—classroom and extra curricular, attendance), *academic* (i.e., time on task, academic learning time), *cognitive* (e.g., self-regulated learning, student responsibility, use of learning strategies to complete a task), and *psychological* (i.e., sense of belonging, relationships with teachers and peers) (Christenson & Anderson, 2002). These types, or taxonomy, of engagement provide a useful heuristic for understanding students' experiences and performance in school and may be helpful to educators and other interventionists in designing interventions to address these important components. Finally, no picture of student engagement should be considered complete without taking students' own perspectives into account.

There are other potential limitations to this study. First, self-report measures are subject to social desirability responding. For monitors, this threat to the internal validity of the responses may be mitigated by the fact that monitors regularly collect and share information as part of their job expectations. Also, monitors were involved in developing the survey and knew that the results would not be used to evaluate them individually. For the students, however, despite assurances that their responses were confidential, their responses may have been affected by the presence of another adult involved with the Check & Connect program or a concern that negative responses would somehow harm their monitor. Finally, the lower response rate on the *Engagement in School—Teacher Rating Scale* and the corresponding reduced number of subjects and the exclusion of a small group of students who did not show an improvement or decline in attendance warrant caution for interpreting these results.

Although it is widely recognized that supportive, positive relationships with adults are the building blocks of successful development, there is a void between literature and school-based intervention practices. Other than Check & Connect, we are aware of only a handful of relationship-based interventions, namely PrimeTime (Cavell & Hughes, 2000) and Banking Time (Pianta, 1999). It should also be noted that while there are a number of mentoring programs targeted to youth, many of these are community- or peer-based and/or do not have structured intervention components with a focus on educational outcomes. The results of this study provide further support for the importance of relationships for the success of students in our schools. While further inquiry is needed, these results suggest that relationships between students and interventionists in schools may be an important consideration for intervention design and possibly as a focus of intervention efforts.

## Acknowledgements

The production of this paper was supported in part by Dakota County Community Services, Minnesota. Opinions expressed herein are those of the authors and do not necessarily represent the position of the funding agency.

A special 'thank you' is extended to the students, parents/caregivers, and school personnel with whom we have been fortunate to work. Also, the implementation of Check & Connect would not be possible without the skill and diligence of the monitors. We would like to especially thank the following monitors for their assistance with data

collection: Anna Arkell, Jesse Florek, Lynne Havsy, Jodi Maagard, Donna Patterson, and Anya Shifman. We would also like to acknowledge the significant contributions of David Evelo, Christine Hurley, and Martha Thurlow to the development of the Check & Connect model. Finally, the statistical consultation provided by Dr. John Bielinski, a former Research Associate at the National Center for Educational Outcomes at the University of Minnesota, was invaluable.

More information regarding the Check & Connect program may be found at: <http://www.ici.umn.edu/checkandconnect>.

## References

- Alexander, K. L., Entwisle, D. R., & Horsey, C. S. (1997). From first grade forward: Early foundations of high school dropouts. *Sociology of Education*, 70, 87–107.
- Anderson, A. R., & Havsy, L. (2001, April). Check & Connect: An examination of the middle school transition. *Poster Presentation at the Annual Meeting of the National Association of School Psychologists, Washington, DC.*
- Barber, B. K., & Olsen, J. A. (1997). Socialization in context: Connection, regulation, and autonomy in the family, school, and neighborhood, and with peers. *Journal of Adolescent Research*, 12(2), 287–315.
- Barrington, B. L., & Hendricks, B. (1989). Differentiating characteristics of high school graduates, dropouts, and non graduates. *Journal of Educational Research*, 82, 309–319.
- Benson, P. L. (1997). *All kids are our kids: What communities must do to raise caring and responsible children and adolescents*. San Francisco, CA: Jossey-Bass Publishers.
- Berndt, T. J., & Keefe, K. (1995). Friends' influence on adolescents' adjustment to school. *Child Development*, 66, 1312–1329.
- Birch, S., & Ladd, G. (1997). The teacher–child relationship and children's early school adjustment. *Journal of School Psychology*, 35, 61–79.
- Cavell, T. A., & Hughes, J. N. (2000). Secondary prevention as context for assessing change processes in aggressive children. *Journal of School Psychology*, 38(3), 199–235.
- Christenson, S. L. (2001). *Promoting engagement with school and learning: A resource for Check & Connect mentors to enhance student success*. Early Risers "Skills for Success" Project, University of Minnesota, Pillsbury United Communities, and Minneapolis Public Schools.
- Christenson, S. L., & Anderson, A. R. (2002). Commentary: The centrality of the learning context for students' academic enabler skills. *School Psychology Review*, 31(3), 378–393.
- Christenson, S. L., Hurley, C. M., Hirsch, J. A., Kau, M., Evelo, D., & Bates, W. (1997, Fall). Check & Connect: The role of monitors in supporting high-risk youth. *Reaching Today's Youth*, 18–21.
- Christenson, S. L., Sinclair, M. F., Lehr, C., & Hurley, C. (2000). Promoting successful school completion. In K. M. Minke, & G. C. Bear (Eds.), *Preventing school problems—promoting school success: Strategies and programs that work* (pp. 211–257). Bethesda, MD: National Association of School Psychologists.
- Christenson, S. L., Sinclair, M. F., Thurlow, M. L., & Evelo, D. (1999). Promoting student engagement with school using the Check & Connect model. *Australian Journal of Guidance and Counseling*, 9(1), 169–184.
- Comer, J. P., Haynes, N. M., Joyner, E. T., & Ben-Avie, M. (1996). *Rallying the whole village: The Comer process for reforming education*. New York: Teachers College Press.
- Connell, J. P., & Wellborn, J. G. (1991). Competence, autonomy, and relatedness: A motivational analysis of self-system processes. In M. R. Gunnar, & L. A. Sroufe (Eds.), *Self processes and development: The Minnesota symposia on child psychology, vol. 23* (pp. 43–77). Hillsdale, NJ: L. Erlbaum Associates.
- Doll, B., & Lyon, M. A. (1998). Risk and resilience: Implications for the delivery of educational and mental health services in schools. *School Psychology Review*, 27(3), 348–363.
- Eccles, J. S., Wigfield, A., Midgley, C., Reuman, D., Mac Iver, D., & Feldlaufer, H. (1993). Negative effects of traditional middle schools on students' motivation. *Elementary School Journal*, 93(5), 553–574.
- Ensminger, M. E., & Slusarcick, A. L. (1992). Paths to high school graduation or dropout: A longitudinal study of a first-grade cohort. *Sociology of Education*, 65, 95–113.

- Feldlaufer, H., Midgley, C., & Eccles, J. S. (1988). Student, teacher, and observer perceptions of the classroom environment before and after the transition to junior high school. *Journal of Early Adolescence*, 8, 133–156.
- Finn, J. D. (1989). Withdrawing from school. *Review of Educational Research*, 59, 117–142.
- Finn, J. D., & Cox, D. (1992). Participation and withdrawal among fourth-grade pupils. *American Educational Research Journal*, 29(1), 141–162.
- Finn, J. D., Folger, J., & Cox, D. (1991). Measuring participation among elementary grade students. *Educational and Psychological Measurement*, 51, 393–402.
- Finn, J. D., & Rock, D. A. (1997). Academic success among students at-risk for school failure. *Journal of Applied Psychology*, 82(2), 221–234.
- Garbarino, J. (1995). *Raising children in a socially toxic environment*. San Francisco, CA: Jossey-Bass Publishers.
- Grannis, J. C. (1994). The dropout prevention initiative in New York City: Educational reforms for at-risk students. In R. J. Rossi (Ed.), *Schools and students at risk: Context and framework for positive change* (pp. 182–206). New York: Teachers College.
- Hamre, B. K., & Pianta, R. C. (2001). Early teacher–child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development*, 72(2), 625–638.
- Hughes, J. N., Cavell, T. A., & Jackson, T. (1999). Influence of the teacher–student relationship on childhood conduct problems: A prospective study. *Journal of Clinical Child Psychology*, 29(2), 173–184.
- Hughes, J. N., Cavell, T. A., & Willson, V. (2001). Further support for the developmental significance of the quality of the teacher–student relationship. *Journal of School Psychology*, 39(4), 289–301.
- Kindermann, T. A. (1993). Natural peer groups as contexts for individual development: The case of children's motivation in school. *Developmental Psychology*, 29, 970–977.
- Lehr, C., Sinclair, M. F., Christenson, S. L. (2003). *Addressing school engagement and truancy prevention during the elementary school years: A replication study of the Check & Connect model*. Manuscript submitted for review.
- Lehr, C. A., Christenson, S. L., Sinclair, M. F., Havs, L. H., Anderson, A. R. (1999). Contextual factors influencing school engagement for high-risk elementary students in Check & Connect. Unpublished manuscript, University of Minnesota.
- Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist*, 56(3), 227–238.
- Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favorable and unfavorable environments. *American Psychologist*, 53(2), 205–220.
- Masten, A. S., & Reed, M. G. (2002). Resilience in development. In S. R. Snyder, & S. J. Lopez (Eds.), *The handbook of positive psychology* (pp. 74–88). Oxford University Press.
- McPartland, J. M. (1994). Dropout prevention in theory and practice. In R. J. Rossi (Ed.), *Schools and students at risk: Context and framework for positive change* (pp. 255–276). New York: Teachers College.
- Midgley, C., Feldlaufer, H., & Eccles, J. S. (1989). Student/teacher relations and attitudes toward mathematics before and after the transition to junior high school. *Child Development*, 60, 981–992.
- Miller, G. E., Brehm, K., & Whitehouse, S. (1998). Reconceptualizing school-based prevention for antisocial behavior within a resilience framework. *School Psychology Review*, 27(3), 364–379.
- Minneapolis Public Schools (2002). *Attendance matters!* Available on-line: <http://www.mpls.k12.mn.us/about/Attendance.shtml>.
- O'Shaughnessy, T. E., & Christenson, S. L. (2001). *Project ELSE—Early Literacy and School Engagement*. Atlanta, GA: Georgia State University.
- Pianta, R. C. (1999). *Enhancing relationships between children and teachers*. Washington, DC: American Psychological Association.
- Pianta, R. C., & Steinberg, M. (1992). Teacher–child relationships and the process of adjusting to school. In R. Pianta (Ed.), *Beyond the parent: The role of other adults in children's lives* (pp. 61–80). San Francisco, CA: Jossey-Bass.
- Pianta, R. C., Steinberg, M. S., & Rollins, K. B. (1995). The first two years of school: Teacher–child relationships and deflections in children's classroom adjustment. *Development and Psychopathology*, 7, 295–312.
- Pianta, R. C., & Walsh, D. J. (1996). *High-risk children in the schools: Creating sustaining relationships*. New York: Routledge.

- Pianta, R. C., & Walsh, D. J. (1998). Applying the construct of resilience in schools: Cautions from a developmental systems perspective. *School Psychology Review*, 27(3), 407–417.
- Resnick, M. D., Bearman, P. S., Blum, R. W., Bauman, K., Harris, K. M., Jones, J., Tabor, J., Beuhring, T., Sieving, R. E., Shew, M., Ireland, M., Behringer, L. H., & Udry, J. R. (1997). Protecting adolescents from harm: Findings from the national longitudinal study of adolescent health. *Journal of the American Medical Association*, 278, 823–832.
- Roeser, R. W., & Eccles, J. S. (1998). Adolescents' perceptions of middle school: Relation to longitudinal changes in academic and psychological adjustment. *Journal of Research on Adolescence*, 8(1), 123–158.
- Roeser, R. W., Eccles, J. S., & Sameroff, A. J. (1998). Academic and emotional functioning in early adolescence: Longitudinal relations, patterns, and predictions by experience in middle school. *Development and Psychopathology*, 10, 321–352.
- Roeser, R. W., Midgley, C., & Urdan, T. (1996). Perceptions of the school psychological environment and early adolescents' psychological and behavioral functioning in school: The mediating role of goals and belonging. *Journal of Educational Psychology*, 88(3), 408–422.
- Rumberger, R. W. (1995). Dropping out of middle school: A multilevel analysis of students and schools. *American Educational Research Journal*, 32(3), 583–625.
- Sage, N. A., & Kindermann, T. A. (1999). Peer networks, behavior contingencies, and children's engagement in the classroom. *Merrill-Palmer Quarterly*, 45(1), 143–169.
- Skinner, E. A., Wellborn, J. G., & Connell, J. P. (1990). What it takes to do well in school and whether I've got it: A process model of perceived control and children's engagement and achievement in school. *Journal of Educational Psychology*, 82(1), 22–32.
- Sinclair, M. F. (2001, June). *Final report. Persistence plus: Using Check & Connect procedures to improve service delivery and positive post-school outcomes for secondary students with serious emotional disturbance*. Minneapolis, MN: University of Minnesota, College of Education and Human Development, Institute on Community Integration.
- Sinclair, M. F., Christenson, S. L., Evelo, D. L., & Hurley, C. M. (1998). Dropout prevention for high-risk youth with disabilities: Efficacy of a sustained school engagement procedure. *Exceptional Children*, 65(1), 7–21.
- Sinclair, M. F., & Kaibel, C. (2002, October). *Program evaluation 2002 final summary report: School success Check & Connect program evaluation*. Minneapolis, MN: University of Minnesota, College of Education and Human Development, Institute on Community Integration.
- Sinclair, M. F., & Lehr, C. A. (2000). *Program evaluation 2000 summary evaluation report: Elementary Check & Connect programs*. Minneapolis, MN: University of Minnesota, College of Education and Human Development, Institute on Community Integration.
- Sinclair, M. F., McCauley, R., & Kaibel, C. (2002). *Scaling up for success: Bush Foundation high school completion initiative*. Minneapolis, MN: University of Minnesota, College of Education and Human Development, Institute on Community Integration and Minneapolis Public Schools, High School Superintendents Office.
- Sinclair, M. F., Thurlow, M. L., Christenson, S. L., Evelo, D. L., Lehr, C. A., & Kaibel, C. (1997). *Check & Connect monitoring sheet, revised*. Minneapolis, MN: University of Minnesota, College of Education and Human Development, Institute on Community Integration.
- Wentzel, K. R. (1997). Student motivation in middle school: The role of perceived pedagogical caring. *Journal of Educational Psychology*, 89(3), 411–419.
- Wentzel, K. R. (1998). Social relationships and motivation in middle school: The role of parents, teachers, and peers. *Journal of Educational Psychology*, 90(2), 202–209.
- Wentzel, K. R., & Watkins, D. E. (2002). Peer relationships and collaborative learning as contexts for academic enablers. *School Psychology Review*, 31(3), 366–377.
- Wigfield, A., & Eccles, J. S. (1994). Children's competence beliefs, achievement values, and general self-esteem: Change across elementary and middle school. *Journal of Early Adolescence*, 14(2), 107–138.